Project Baseline Summary Report

Data Source: **EM CDB** Report Number: **GEN-01b**

Operations/Field Office: **Savannah River** Print Date: **3/9/2000**

Site Summary Level: **Savannah River Site** HQ ID: **0038**

Project **SR-HL03 / Waste Removal Operations and Tank Closure**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

THE SCOPE OF WORK DESCRIBED IN THIS PROJECT IS WRITTEN FOR FUNDING AT THE PLANNING LEVEL. This project involves removing the high-level radioactive waste from the H and F Area underground waste storage tanks and transferring it to Waste Pretreatment for processing. As tanks are emptied of waste, this project also physically isolates the emptied tanks, fills them with grout, and transitions them into a low surveillance and maintenance mode. Activities include operation of slurry pumps and transfer jets to re-dissolve precipitated waste salts and suspend insoluble waste solids; demonstrating new salt removal technologies; and operationally closing tanks. Work is done remotely or with shielding due to the intense radiation fields. WASTE REMOVAL OPERATIONS activities involve the waste (either salt or sludge or, in some cases, both) in Tanks 1-16, 18-19, 21-39, 41 and 43-50. Tanks 17 and 20 have already been emptied and operationally closed. Prior to waste removal, slurry pumps and transfer jets must be retrofitted on each tank by the SR-HL12 line item project (3 slurry pumps and 1 transfer jet for each salt tank, and 4 slurry pumps and 1 transfer pump for each sludge tank). Waste removal involves adding large amounts of corrosion inhibited water to each tank; operating the slurry pumps to suspend the insoluble sludge or dissolve the saltcake; operating the transfer jet to transfer the slurried waste out of the tank; and then lowering the slurry pumps and repeating the process until the tank is empty. After waste removal, the interior of each tank is water washed using a 10,000-gallon, heated water system connected to rotary spray jets. For tanks with contaminated annuli, a similar process is employed for annulus washing. During waste removal, process samples, waste volume measurements and tank inspections are conducted routinely. As groups of tanks are emptied and removed from service, similar activities will take place in associated process facilities such as evaporator cells and diversion boxes. SALT REMOVAL DEMONSTRATIONS will be conducted to develop more cost effective technologies for salt removal. Three new salt removal technologies will be demonstrated individually and in combination: modified density gradient, water jetting and a single slurry pump. OPERATIONAL TANK CLOSURE occurs after waste removal and water washing. Samples are taken to determine residual waste; a Performance Evaluation and tank-specific Closure Module are developed; and regulatory approval is obtained. Then each tank is physically isolated (all piping and electrical connections cut, capped and sealed; and all openings into the tank sealed) and filled with grout. When all tanks in a geographical group are operationally closed, the common supporting services and facilities for that group will also be operationally closed and isolated. TRANSITION: When all tanks and tank groups have been operationally closed in H Tank Farm (SR-HL01), F Tank Farm (SR-HL02) and Waste Pretreatment (SR-HL04), these facilities will transition to HLW Facilities Disposition (SR-FA24). TECHNICAL APPROACH: Key HLW waste removal and operational closure technologies include the following: salt dissolution and sludge suspension via mechanical agitation (slurry pumps); remote process sampling; corrosion control of the carbon steel waste tanks; heel removal techniques and specialized equipment; and grout formulations to chemically bind radioactive contaminants. TECHNOLOGY NEEDS include the following: salt removal methods that are more cost effective than slurry pumps (e.g., water jetting, hydraulic mining, modified density gradient, etc.); more effective methods to remove tank heels (e.g., sludge heel, hardened sludge, zeolite, sand, etc.); and enhanced methods for retrieval of waste from annulus spaces.

Project Status in FY 2006:

By the end of FY06, waste removal will be completed on six additional tanks (Tanks 4, 11, 15, 16, 18, and 19). These six tanks, plus tanks 17 & 20 which were emptied and operationally closed prior to FY99, will make 8 tanks that will have completed waste removal by the end of FY06. OPERATIONAL TANK CLOSURE: Four additional old-style waste tanks that have been emptied of waste will also be operationally closed (Tanks 11, 16, 18, and 19). Tanks 17 & 20 were operationally closed prior to FY99. Therefore by the end of 2006, a total of six tanks will have been operationally closed. Since all four of the tanks in the tank group 17-20 will have been operationally closed, the common supporting infrastructure for

Project Description Narratives

this tank group will also be operationally closed.

Post-2006 Project Scope:

WASTE REMOVAL: By mid FY26 waste will be removed from all remaining tanks and they will be water washed. Final tank and support facility operational closures will be completed by FY28. SALT REMOVAL DEMONSTRATIONS: Salt removal demonstrations will be held from FY10-FY12, corresponding to the startup of the new salt processing facilities. OPERATIONAL CLOSURES: The remaining 41 tanks, including tank groups and supporting infrastructure, plus process facilities, will be operationally closed by FY28. All noncompliant tanks will have been operationally closed by 9/30/20.

Project End State

The project will end in FY28 when all waste removal and tank operational closure activities are complete. Disposition is covered by High Level Waste Facilities Disposition (SR-FA24).

Cost Baseline Comments:

Outyear cost baseline estimates use FY01 as the base year, adding escalation and adjusting for the following major programmatic changes for the 3 major components of this project: waste removal operations, waste removal demonstrations, and operational tank closures. WASTE REMOVAL operations are relatively constant for FY02-FY03 and are increased by 50% in FY04 as more tanks begin waste removal. Waste removal remains at this increased level for 6 years through FY10, when costs are again increased to reflect increased waste removal activity and stay at this level from FY10 through FY18. In FY19 operating costs are reduced by half, reflecting a decrease in sludge removal. Waste removal continues at this reduced level through FY22, when operating costs are again reduced to reflect the reduced number of tanks undergoing waste removal. By the end of FY24, waste removal operations are complete. SALT REMOVAL DEMONSTRATIONS are scheduled from FY10 through FY12, corresponding to the startup of the new salt processing facility. No demonstrations are scheduled after FY12. OPERATIONAL TANK CLOSURES at SRS began in FY97 with the operational closure of Tank 20, the first high-level waste tank in the DOE complex to be so closed. In FY98 Tank 17 was operationally closed. The next tanks to be operationally closed are Tanks 16 and 19 in FY03 and Tanks 11 and 18 in FY04. Tank 18 is the 4th tank in a 4-tank group (Tanks 17-20). This group, with all common supporting infrastructure will also be operationally closed in FY04, marking the first time that an area of the Tank Farms is operationally closed. As tanks and tank groups are operationally closed, there are corresponding reductions in annual tank farm operating costs. After FY04 through the end of the tank operational closure program in FY28, the tank closure schedule varies widely, depending on when waste tanks are emptied and funding is available. A tank-by-tank operational closure schedule is available and is included in the milestone listing. Years in which major sections of the tank farms are operationally closed include FY12 for tank groups 13-16 and 21-24; FY18 for tank group 9-12; FY20 for tank group 1-8; FY25 for tank groups 35-37 and 44-47; and FY 28 for all remaining tanks and tank groups, including the pretreatment process tanks and the evaporator feed tanks.

Safety & Health Hazards:

The main hazard in this facility is from the highly radioactive liquid waste (33 million gallons, 450 million Ci) stored in 46 underground storage tanks. The main radioactive constituents of this waste are Strontium-90, Cesium-137, Plutonium-238, Plutonium-239, and Plutonium-241. The tanks were built underground to provide shielding from the intense radiation fields of this highly toxic waste. Operations, maintenance and waste handling are done under radiological conditions to avoid direct personnel exposure and prevent contamination. Other hazards include exposure to process chemicals

Project Description Narratives

(such as nitric acid and sodium hydroxide) as well as miscellaneous hazards commonly encountered in industrial settings (lifting, tripping, falls, rotating equipment, etc.). These hazards are controlled both through engineering controls (hand rails, motor guards, etc.) and through administrative controls (policies and procedures, training, personal protective equipment, etc.).

Safety & Health Work Performance:

All work is performed using a WSRC Integrated Safety Management System (ISMS) approach. The ISMS integrates safety considerations into management and work practices at all levels to accomplish missions while protecting the public, the worker, and the environment. The key elements of the WSRC ISMS are to define the scope of work, identify and analyze hazards associated with the work, develop and implement hazard controls, perform work within controls, and provide feedback on adequacy of controls and continue to improve safety management. The WSRC Integrated Procedures Management System is the primary mechanism for implementing the objective, principles and functions of the ISMS. This system establishes Company-Level, Division-level, and Program-specific procedures consistent with organizational roles, and ensures a consistent, disciplined site-wide approach to safety while performing work.

PBS Comments:

Funding for Waste Removal operations is at the minimum level necessary to ensure safe storage and management of the liquid high level radioactive waste and to meet an overall system production of 200 canisters per year from FY98-04, 225 canisters in FY05, and between 200 and 250 canisters per year in FY06-24.

The major drivers for this project are:
Federal Facility Agreement - Of the 45 tanks that currently store high level liquid waste (Projects SR-HL01, H Tank Farm and SR-HL02, F Tank Farm), 24 "old style" tanks do not meet current secondary containment and leak detection standards as set forth in the Federal Facility Agreement that was executed by the Department of Energy, the Environmental Protection Agency and the South Carolina Department of Health and Environmental Control on January 15, 1993. Eleven of the old-style tanks have known leaks although none of the leak sites are active. Under terms of the proposed agreement, the 24 old style tanks may be used for the continued storage of their current waste inventory but must be removed from service no later than FY28. This proposed date, however, has been rejected by the state as not aggressive enough. Negotiations are underway to establish a more aggressive commitment date that will meet regulatory expectations while balancing technical and resource limitations. Timely completion of this Waste Removal project is essential to meeting these regulatory requirements.
Site Treatment Plan - The DOE and SCDHEC Site Treatment Plan for SRS, signed 9/95, commits DWPF to the following waste removal schedule: "After the startup period is complete and DWPF begins full operation, the maintenance of an average of 200 canisters of processed glass per year will be required in order to meet the schedule for removal of backlogged and currently generated waste inventory by the year 2028" (see Vitrification Project PBS). All feed to DWPF as required to produce the 200 canisters per year must be removed from the HLW tanks using the funding provided by this Waste Removal Operations project.

Baseline Validation Narrative:

This project has completed an internal validation conducted by SRS personnel independent from the project.

General PBS Information

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General PBS Information

Project Validated? Yes **Date Validated:** 1/29/1999

Has Headquarters reviewed and approved project? No

Date Project was Added: 12/1/1997

Baseline Submission Date: 7/3/1999

FEDPLAN Project? Yes

Drivers:

CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
N	N	N	N	N	Y	N	N

Project Identification Information

DOE Project Manager: H. B. Gnann

DOE Project Manager Phone Number: 803-208-6076

DOE Project Manager Fax Number: 803-208-7414

DOE Project Manager e-mail address: howard.gnann@srs.gov

Is this a High Visibility Project (Y/N): Y

Planning Section

Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006
PBS Baseline (current year dollars)	102,815	1,063,953	1,166,768	3,574	3,574	2,492	2,492	2,893	2,701	2,530	9,315	27,112	24,474	10,908	16,816
PBS Baseline (constant 1999 dollars)	90,225	603,646	693,871	3,574	3,574	2,492	2,492	2,893	2,607	2,357	8,451	23,950	21,051	9,136	13,714
PBS EM Baseline (current year dollars)	102,815	1,063,953	1,166,768	3,574	3,574	2,492	2,492	2,893	2,701	2,530	9,315	27,112	24,474	10,908	16,816

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Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006
PBS EM Baseline (constant 1999 dollars)	90,225	603,646	693,871	3,574	3,574	2,492	2,492	2,893	2,607	2,357	8,451	23,950	21,051	9,136	13,714

	2007	2008	2009	2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
PBS Baseline (current year dollars)	18,368	14,656	25,378	32,929	196,935	257,609	202,879	315,199	0	0	0	0	0	0	0	0
PBS Baseline (constant 1999 dollars)	14,585	11,332	19,106	24,139	133,372	152,705	105,264	143,143	0	0	0	0	0	0	0	0
PBS EM Baseline (current year dollars)	18,368	14,656	25,378	32,929	196,935	257,609	202,879	315,199	0	0	0	0	0	0	0	0
PBS EM Baseline (constant 1999 dollars)	14,585	11,332	19,106	24,139	133,372	152,705	105,264	143,143	0	0	0	0	0	0	0	0

Baseline Escalation Rates

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
0.00%	0.00%	0.00%	3.60%	3.60%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%

2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%

Project Reconciliation

Project Completion Date Changes:

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Project Reconciliation

Previously Projected End Date of Project: 9/1/2026

Current Projected End Date of Project: 9/30/2028

Explanation of Project Completion Date Difference (if applicable):

Due to funding constraints in FY00 - FY06, the project completion is delayed by 2 years.

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	795,297	**Actual 1997 Cost:**	3,574	**Actual 1998 Cost:**	2,492
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	789,231	**Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):**			21,309
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	810,540				

Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):	122,737	Reductions in Tank Closure and waste removal operations are included.
Cost Associated with New Scope (+):		
Cost Growth Associated with Scope Previously Reported (+):		
Cost Reductions Due to Science & Technology Efficiencies (-):		
Subtotal:	687,803	
Additional Amount to Reconcile (+):	2	
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	**687,805**	

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Initiate Salt Removal Demonstrations	SR-HL03-099		10/1/2009								
Complete Waste Removal Demonstrations	SR-HL03-130		10/1/2012								

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Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Project Complete	SR-HL03-281		9/30/2028								
NOT A MILESTONE			9/30/1998								
NOT A MILESTONE			9/30/1998								
Close waste tank 19	SR-HL03-030		4/1/2003	4/1/2003			Y				
Close waste tank 18	SR-HL03-040		4/1/2004	4/1/2004			Y				
Close waste tank 11	SR-HL03-041		9/30/2004	9/1/2010			Y				
Close waste tank 15	SR-HL03-120		9/30/2007	4/1/2013			Y				
Close waste tank 4	SR-HL03-080		9/30/2008	9/1/2022			Y				
Close waste tank 12	SR-HL03-100		9/30/2010	4/1/2011			Y				
Close waste tanks 21 & 22	SR-HL03-101		9/30/2010	12/31/2011			Y				
Close waste tank 5	SR-HL03-110		9/30/2011	9/1/2022			Y				
Close waste tanks 23 & 24	SR-HL03-121		9/30/2012	4/1/2014			Y				
Close waste tank 13	SR-HL03-122		9/30/2012	4/1/2015			Y				
Close waste tank 14	SR-HL03-123		9/30/2012	4/1/2010			Y				
Close Waste Tank 16	SR-HL03-031		9/30/2003	4/1/2015			Y				
Close waste tank 8	SR-HL03-150		9/30/2015	9/1/2022			Y				
Close waste tank 2	SR-HL03-170		9/30/2017	12/31/2018			Y				
Close waste tank 6	SR-HL03-160		9/30/2017	9/1/2022			Y				
Close waste tank 10	SR-HL03-171		9/30/2017	4/1/2020			Y				
Close waste tanks 1 & 9	SR-HL03-180		9/30/2018	4/1/2020			Y				
Close waste tank 3	SR-HL03-190		9/30/2019	9/1/2022			Y				
Close waste tanks 35 & 39	SR-HL03-191		9/30/2019								

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Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Close waste tank 7	SR-HL03-200		9/30/2020	9/1/2022			Y				
Close waste tanks 31 & 34	SR-HL03-201		9/30/2020								
Close waste tank 28	SR-HL03-210		9/30/2021								
Close waste tank 44	SR-HL03-220		9/30/2022								
Close waste tank 45	SR-HL03-230		9/30/2023								
Close waste tanks 36, 40, & 42	SR-HL03-240		9/30/2024								
Close waste tanks 26, 30, 37, 46, &47	SR-HL03-250		9/30/2025								
Close waste tanks 38, 43, & 51	SR-HL03-260		9/30/2026								
Close waste tanks 25, 32, & 50	SR-HL03-270		9/30/2027								
Close waste tanks 27, 29, 33, 41, 48, & 49	SR-HL03-280		9/30/2028								
Project Start	SR-HL03-001		10/1/1996								

Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critial Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Initiate Salt Removal Demonstrations	SR-HL03-099		Y				4	1	1		
Complete Waste Removal Demonstrations	SR-HL03-130		Y				4	1	1		
Project Complete	SR-HL03-281				Y						
NOT A MILESTONE										Y	
NOT A MILESTONE										Y	
Close waste tank 19	SR-HL03-030										
Close waste tank 18	SR-HL03-040										

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Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critial Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Close waste tank 11	SR-HL03-041										
Close waste tank 15	SR-HL03-120										
Close waste tank 4	SR-HL03-080										
Close waste tank 12	SR-HL03-100										
Close waste tanks 21 & 22	SR-HL03-101										
Close waste tank 5	SR-HL03-110										
Close waste tanks 23 & 24	SR-HL03-121										
Close waste tank 13	SR-HL03-122										
Close waste tank 14	SR-HL03-123										
Close Waste Tank 16	SR-HL03-031										
Close waste tank 8	SR-HL03-150										
Close waste tank 2	SR-HL03-170										
Close waste tank 6	SR-HL03-160										
Close waste tank 10	SR-HL03-171										
Close waste tanks 1 & 9	SR-HL03-180										
Close waste tank 3	SR-HL03-190										
Close waste tanks 35 & 39	SR-HL03-191										
Close waste tank 7	SR-HL03-200										
Close waste tanks 31 & 34	SR-HL03-201										
Close waste tank 28	SR-HL03-210										
Close waste tank 44	SR-HL03-220										
Close waste tank 45	SR-HL03-230										

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Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critial Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Close waste tanks 36, 40, & 42	SR-HL03-240										
Close waste tanks 26, 30, 37, 46, &47	SR-HL03-250										
Close waste tanks 38, 43, & 51	SR-HL03-260										
Close waste tanks 25, 32, & 50	SR-HL03-270										
Close waste tanks 27, 29, 33, 41, 48, & 49	SR-HL03-280										
Project Start	SR-HL03-001			Y							

Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planne 200
Tech.														
Deployed	Ntd	3.00	0.00	3.00						2.00		1.00		

Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035
Tech.													
Deployed	Ntd												

Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total
Tech.										
Deployed	Ntd									3.00

Technology Needs

Site Need Code: SR99-2028

Site Need Name: Alternative Waste Removal Technology

Focus Area Work Package ID: WT-02-01 **Focus Area Work Package:** Waste Mobilization and Retrieval

Focus Area: TFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Risk Reduction

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Flygt Mixer		

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	00496: -	Y	N
	00499: -	Y	N

Site Need Code: SR99-2035

Site Need Name: Develop Advanced Techniques for Life Extension of High Level Waste Tanks and Piping

Focus Area Work Package ID: **Focus Area Work Package:**

Focus Area: **Agree with Technology Link:** N

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	00503: -	Y	N
	00496: -	Y	N
	00499: -	Y	N
	00502: -	Y	N

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Project **SR-HL03 / Waste Removal Operations and Tank Closure**

Technology Needs

Site Need Code: SR99-2037

Site Need Name: Tank Heel Removal/Closure Technology

Focus Area Work Package ID: WT-08-01 **Focus Area Work Package:** Solids Pretreatment

Focus Area: TFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Risk Reduction

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
In Situ Viscosity and Density Monitoring Using Quartz Resonators		
Bamberger Ultrasonic Sensor		
Automated Monitoring System for Fluid Level and Density in High-Level Waste Tanks		
AEA Fluidic Pulse Jet Mixer		
Heel Retrieval for SRS	200,000	Low
Heel Retrieval for SRS	200,000	Low
Tank Riser Pit Decontamination System		
Flygt Mixer		
Sludge Wash Monitor		

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	00496: -	Y	N
	00499: -	Y	N

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Project **SR-HL03 / Waste Removal Operations and Tank Closure**

Technology Needs

Site Need Code: SR99-2039

Site Need Name: Methods to Unplug Waste Transfer Lines

Focus Area Work Package ID: TFA-1 **Focus Area Work Package:** Required Steps to Tank Closure at Hanford, ORR, Idaho, and SRS

Focus Area: TFA **Agree with Technology Link:** N

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	00503: -	Y	N
	00496: -	Y	N
	00499: -	Y	N
	00502: -	Y	N

Site Need Code: SR99-2040

Site Need Name: Demonstrate Remote Decommissioning and Disassembly of High Level Waste Processing Equipment

Focus Area Work Package ID: WT-04-01 **Focus Area Work Package:** Ancillary Tank Equipment Enhancements

Focus Area: TFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Risk Reduction

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

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Project **SR-HL03 / Waste Removal Operations and Tank Closure**

Technology Needs

Site Need Code: SR99-2041

Site Need Name: Demonstration of Alternative Mixer Technology for HLW Pump Tanks

Focus Area Work Package ID: TFA-1 **Focus Area Work Package:** Required Steps to Tank Closure at Hanford, ORR, Idaho, and SRS

Focus Area: TFA **Agree with Technology Link:** N

Benefits (Cost, Risk Reduction, Both): Both

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
AEA Fluidic Pulse Jet Mixer	10,000	Low
AEA Fluidic Pulse Jet Mixer	10,000	Low
Flygt Mixer	10,000	Low

Site Need Code: SR99-2044

Site Need Name: Demonstrate In-Situ Characterization Weight Percent Probe

Focus Area Work Package ID: TFA-1 **Focus Area Work Package:** Required Steps to Tank Closure at Hanford, ORR, Idaho, and SRS

Focus Area: TFA **Agree with Technology Link:** N

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Automated Monitoring System for Fluid Level and Density in High-Level Waste Tanks		

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	00503: -	Y	N
	00496: -	Y	N
	00499: -	Y	N
	00502: -	Y	N

Technology Needs

Site Need Code: SR99-2045

Site Need Name: In-Situ Waste Tank Corrosion Probe

Focus Area Work Package ID: TFA-1 **Focus Area Work Package:** Required Steps to Tank Closure at Hanford, ORR, Idaho, and SRS

Focus Area: TFA **Agree with Technology Link:** N

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Corrosion Probe		
Integrated Raman pOH Sensor for In-Tank Corrosion Monitoring		

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	00512: -	Y	N
	00496: -	Y	N
	00499: -	Y	N

Site Need Code: SR99-2049-S

Site Need Name: Technetium Chemistry Under Waste Removal Conditions

Focus Area Work Package ID: **Focus Area Work Package:**

Focus Area: **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Risk Reduction

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	00510: -	Y	N
	00511: -	Y	N

Project Baseline Summary Report

Data Source: **EM CDB** Report Number: **GEN-01b**

Operations/Field Office: **Savannah River** Print Date: **3/9/2000**

Site Summary Level: **Savannah River Site** HQ ID: **0038**

Project **SR-HL03 / Waste Removal Operations and Tank Closure**

Technology Needs

Site Need Code: SR99-2051

Site Need Name: Technology to Mitigate Effects of Technitium under Tank Closure Conditions

Focus Area Work Package ID:

Focus Area Work Package:

Focus Area:

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Both

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Technetium Removal	20,000	Low

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	00510: -	Y	N
	00511: -	Y	N

Technology Deployments

	Deployment Year		
Deployment Status	**Planned**	**Forecast**	**Actual Date**
Technology Name: AEA Fluidic Pulse Jet Mixer			
Potential Deployment	2000		
Technology Name: Flygt Mixer			
Potential Deployment	2000		
Technology Name: Robotic Equipment Disassembly			
Potential Deployment	2002		